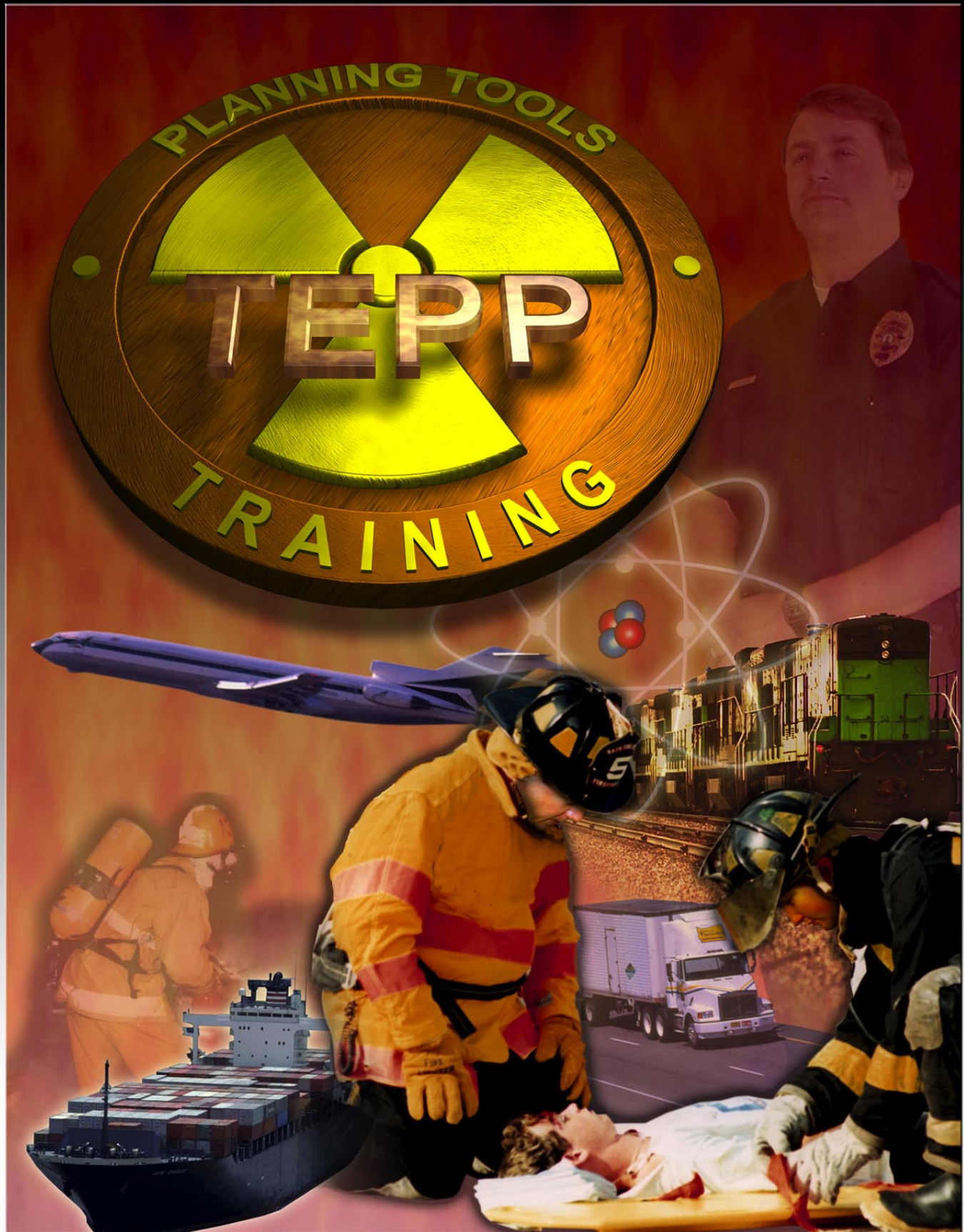




DEPARTMENT OF ENERGY



**Low Specific Activity (LSA) Materials Hazard Class 7  
Radioactive Material Shipment With  
Environmental Release Scenario Package**

Prepared For The Department of Energy Office of Transportation and Emergency Management

**This page intentionally left blank**

# table of contents



## Transportation Emergency Preparedness Program (TEPP)

### Low Specific Activity (LSA) Materials Hazard Class 7 Radioactive Material Shipment With Environmental Release Scenario Package



Checklist For Planning And Conducting The LSA Materials (Class 7-Radioactive) Emergency Response Drill .....	4
Scope .....	5
Pre-drill Safety Requirements .....	5
Drill Activity Boundaries and Off-Limit Areas .....	6
Safety Equipment .....	6
Site Specific Hazards .....	6
General Safety Provisions .....	7
Security/Public Safety Provisions .....	8
Vehicle Safety Provisions .....	9
SUMMARY .....	10
1.0 Introduction .....	11
2.0 Scope .....	12
3.0 Objectives .....	12
4.0 Example Schedule .....	15
5.0 Participation .....	16
6.0 Conduct .....	17
7.0 Narrative Summary/Timeline .....	20
8.0 Messages .....	24
9.0 Radiological Data .....	34
FIGURE 1: CONTAMINATION LEVELS .....	35
10.0 Meteorological Data .....	36
11.0 Public Information Data .....	36
12.0 Drawings/Props .....	36
13.0 Simulations .....	44
14.0 Security .....	44
15.0 Medical Data .....	45





## Checklist For Planning And Conducting The LSA Materials (Class 7-Radioactive) Emergency Response Drill

\_\_\_\_\_ Drill Date

(For additional information refer to the “*Guidance for Planning, Conducting and Evaluating Transportation Emergency Preparedness Tabletops, Drills and Exercises*”)

### Phase 1 - Planning

1. \_\_\_\_\_ Determine the Scope, Objectives and Extent Of Play For The Drill (Drill May Be Modified To Meet Local Needs And Objectives)
2. \_\_\_\_\_ Determine Drill Participants
3. \_\_\_\_\_ Establish Schedule And Plan For The Drill (Section 4.0 In Scenario Package Should Be Modified Based On Drill Dates/Times)
4. \_\_\_\_\_ Notify Proposed Participating Agencies And Confirm Support
5. \_\_\_\_\_ Determine Locations For Drill Activities (Command Center, Accident Scene, Dispatchers Office, Etc.)
6. \_\_\_\_\_ Develop A Safety Plan (Use Attached Safety/Plan Checklist)
7. \_\_\_\_\_ Determine If Pre-Notification To The Media Is Necessary (If a Sample Media Plan is needed refer to the “*Guidance for Planning, Conducting and Evaluating Transportation Emergency Preparedness Tabletops, Drills and Exercises*”). If So, Appoint A Public Information Officer To Handle Notifications/Inquiries
8. \_\_\_\_\_ Establish Controller Assignments And Simulated Roles (Last Page Of Section 6.0)
9. \_\_\_\_\_ Pull Applicable Objective Evaluation Checklists From The Objectives Module (These Are To Be Included in the Drill Scenario Packages for the Controller)
10. \_\_\_\_\_ Modify the Shipping Document Included In The Drill Package (Section 12) To Include Drill Specific Information (Such As The Emergency Response Phone Number). Boxes On The Shipping Document Where Information Should Be Provided Are Marked With An “X”.
11. \_\_\_\_\_ Reproduce Sufficient Copies Of Completed/Reviewed Scenario Packages, As Well As Copies Of The Applicable Objective Evaluation Checklists From Manual Section IV
12. \_\_\_\_\_ Determine And Acquire Props Needed For Site Simulation
13. \_\_\_\_\_ Conduct Player And Observer Briefings







## Phase 2 - Drill Setup

- 1.\_\_\_\_ Ensure All Controllers Know The Schedule And Their Designated Position
- 2.\_\_\_\_ Ensure All Props Have Been Evaluated And Validated Prior To Set Up
- 3.\_\_\_\_ Set Up The Props At Each Drill Location
- 4.\_\_\_\_ Ensure Safety Precautions Are In Place
- 5.\_\_\_\_ Verify All Controllers Are In Position And Key Players/Agencies Are Available To Begin The Drill

## Phase 3 - Drill Play

- 1.\_\_\_\_ Ensure Safety Is And Remains The Most Important Concern Of The Drill
- 2.\_\_\_\_ Ensure Controllers Are In Place
- 3.\_\_\_\_ Ensure Messages Are Distributed According To Schedule
- 4.\_\_\_\_ Utilize Hold Messages If A Break In Play Is Needed
- 5.\_\_\_\_ Ensure ALL Players And Controllers At ALL Drill Locations Receive The Drill Termination Message

## Phase 4 - Post Drill Activities

- 1.\_\_\_\_ Dismantle Drill Scene Props And Return Site To Original State
- 2.\_\_\_\_ Direct All Players And Controllers To The Debriefing Location(s)
- 3.\_\_\_\_ Conduct Drill Debriefing Based On Controller and Player Evaluations
- 4.\_\_\_\_ Document and Track Drill/Exercise Strengths and Recommended Improvement Areas

This is an example of a Safety Plan and Checklist for a transportation emergency drill or exercise. The example is generic and is incomplete in that necessary event-specific information is not included.

## Scope

This plan has been included as a scenario package checklist so that controllers will be able to anticipate and recognize unplanned events that could result in personal injury or unforeseen property damage. It enables event participants to be governed by the safety guidelines established for the event.

## Pre-drill Safety Requirements

Controllers must be staged before the event is scheduled to begin to ensure there are no pre-existing safety concerns that could affect the start of the event. Controller assignments and locations are identified in Section 6.0 of the scenario manual. The Drill Lead Controller must obtain a safety check from all lead controllers prior to event commencement.





## **Drill Activity Boundaries and Off-Limit Areas**

Drill boundaries, which define the areas at the incident scene that will be in and out of play, will be discussed in briefings, if applicable. Boundaries may also be defined by the “extent of play” for each objective, as shown in Scenario Package Section 3, or depicted on maps in the package. Safety concerns that arise during the drill will be dealt with immediately by the drill controllers in the affected area. As objectives are accomplished, certain areas may be allowed to return to normal activities.

## **Safety Equipment**

Drill participants are required to follow all existing safety guidelines for the use of protective equipment. From the checklist below, mark an X next to the items that are applicable to this drill or exercise, and ensure that these items are provided for participants, as applicable.

- ☐ controller communications
- ☐ drill/exercise identification (i.e., armbands, vests, caps, etc.)
- ☐ illumination devices
- ☐ first aid kit
- ☐ water coolers (field teams may be directed to carry their own water)
- ☐ water carriers (rovers may be directed to deliver water to personnel)
- ☐ personnel comfort items (specify)
- ☐ fire extinguishers
- ☐ safety harnesses/lifelines, etc. (specify)
- ☐ eye/hearing protection devices (specify)
- ☐ gloves (specify who and when they should be worn)
- ☐ hard hats (specify who and when they should be worn)
- ☐ other protective clothing (specify)
- ☐ miscellaneous hand tools (specify)

## **Site Specific Hazards**

Drill or exercise participants are required to follow all hazard postings in event areas. Participants must obey all traffic laws during the event. Response participants will NOT use emergency lights and sirens when responding to simulated accident scenes. Field teams will travel on designated roads and trails. Field team vehicles will be equipped with fire extinguishers and shovels. No vehicles should go off road where wildlife such as snakes and insects may be encountered.

In the event of electrical storms, high winds or other severe weather, participants will follow controller instructions. Field activities should be suspended or terminated under these conditions.

Controllers and responders must be mindful of symptoms of heat stress. Controllers will ensure that emergency response personnel are allowed the opportunity to rest whenever necessary. Controllers must halt drill play anytime a responder appears to be in distress and take all appropriate actions to ensure the well-being of individuals.

**Low Specific Activity (LSA) Materials Hazard Class 7  
Radioactive Material Shipment With Environmental Release  
Scenario Package**

**planning tools**



From the checklist below, mark an X next to the actual hazards that may be applicable to this drill or exercise. Special safety provisions should be made for all items checked.

- ☐ traffic (field teams need to be aware of road condition hazards and traffic, especially when performing radiological monitoring)
- ☐ terrain (field teams may be required to use unpaved roads. Each vehicle will be equipped with a fire extinguisher, shovel, bucket, and communications capabilities.)
- ☐ overhead obstructions and hazards
- ☐ electrical storms
- ☐ heat stress
- ☐ cold stress (hypothermia)
- ☐ high winds
- ☐ visibility conditions
- ☐ electrical equipment hazards
- ☐ mechanical equipment/machinery
- ☐ hazardous material/storage areas
- ☐ fuel loading concerns
- ☐ thermal hazards
- ☐ tripping hazards
- ☐ confined spaces
- ☐ elevated locations
- ☐ hazardous materials
- ☐ pest control (i.e., fire ants, wasps, snakes, ticks, mosquitoes, etc.)
- ☐ personnel safety provisions (individual responsibilities/limits)
- ☐ outside agency safety provisions (responsibilities/limits)
- ☐ vehicle safety provisions (i.e., traffic laws shall be obeyed, seat belts used, etc.)
- ☐ drill/exercise control provisions (i.e., safety briefings, how to handle actual emergencies, etc.)

## General Safety Provisions

This section details specialized personnel assignments and functions related to safety concerns. The Controller Organization, found in Section 6.0 of the scenario manual, identifies personnel assignments. No changes will be made to controller assignments without prior assurance that any replacements have equal or greater understanding of safety concerns that could be encountered at the location to which they are assigned.



DEPARTMENT OF ENERGY







All safety concerns must be brought to the attention of the Drill/Exercise Lead Controller and the Drill/Exercise Safety Lead through the Controller organization.

Specific incidents and materials that may have adverse effects on people have been addressed in specific sections of the scenario manual. Every effort has been made to anticipate and minimize hazardous situations inherent in this drill/exercise. From the checklist below, mark an X next to the safety provisions that are applicable to this drill or exercise, and ensure that these provisions are communicated to participants and/or enforced.

- \_\_\_\_\_ individual participants are personally responsible for their individual safety
- \_\_\_\_\_ each participant must monitor his/her own physical condition for signs of overexertion or distress
- \_\_\_\_\_ any participant who observes another person injured or otherwise in need of assistance will immediately cease drill/exercise activities and render aid/call for assistance
- \_\_\_\_\_ all injuries, no matter how slight, must be immediately reported to the nearest Controller
- \_\_\_\_\_ all ascents or descents from elevated heights will be by ladder, stairway or other safe method. Jumping from elevated positions is not allowed
- \_\_\_\_\_ Controllers must be familiar with the hazards of the equipment involved and the required safety measures
- \_\_\_\_\_ actual emergencies will be dealt with by a shadow force. If an emergency occurs that requires drill/exercise responders to assist, the Lead Controller will suspend or terminate part or all of drill play as deemed necessary.

## Security/Public Safety Provisions

From the checklist below, mark an X next to the security and public safety provisions that are applicable to this drill or exercise. Special safety provisions should be made for all items checked.

- \_\_\_\_\_ a backup or "shadow" force (fire, EMS and police) is in place to ensure community coverage is not impacted by event response
- \_\_\_\_\_ event calls should/may go to non-emergency lines to ensure that actual "911" calls are handled expeditiously
- \_\_\_\_\_ security personnel must keep firearms holstered at all times during the drill/exercise
- \_\_\_\_\_ drill/exercise play will be suspended in the event of an actual emergency
- \_\_\_\_\_ emergency vehicles will respond without lights and sirens
- \_\_\_\_\_ cordoning off of large public areas will be simulated unless cordoning is required for safety reasons
- \_\_\_\_\_ rerouting traffic will be simulated unless cordoning is required for safety reasons



## Vehicle Safety Provisions

From the checklist below, mark an X next to the vehicle safety provisions that are applicable to this drill or exercise. Ensure that these provisions are communicated to participants and/or enforced.

- ☐ no vehicle will be driven in such a manner that posted speed limits are exceeded or safe driving rules are violated
- ☐ only those vehicles involved in the drill/exercise will be used for movement.
- ☐ vehicles may not be mounted or dismounted until they come to a complete stop
- ☐ spotters will be used when backing vehicles out of areas where other people or vehicles are present
- ☐ roadblocks will be simulated by placing a blocking vehicle on the shoulder of the road and notifying an observer that a roadblock has been established
- ☐ all Controller vehicles should be identified/placarded to eliminate player confusion or concerns.
- ☐ seat belts must be worn in moving vehicles if the vehicle is equipped with them

**This completed Scenario Package Planning Checklist should be kept as part of the hard-copy documentation file for drill planning for this event.**

Name of Drill Planner \_\_\_\_\_

Signature of Drill Planner \_\_\_\_\_

Drill Date \_\_\_\_\_

Who Completed Checklist \_\_\_\_\_



DEPARTMENT OF ENERGY



**SUMMARY**

# **Low Specific Activity (LSA) Materials**

## **Transportation Emergency Preparedness Drill**

- Drill involves a one vehicle truck wreck on a public highway.
- This drill does not include fire or fuel spillage.
- LSA Materials (Class 7 - Radioactive) have been released from both outer and inner packaging.
- The drill, as written, includes an (optional) injury scenario.
- Drill play will cover the initial occurrence of the accident through the arrival of a RAD Response Team and the initiation of recovery efforts.







## 1.0 Introduction

This manual provides the basis for an emergency response drill of a simulated transportation accident involving a highway shipment of Low Specific Activity (LSA) materials (Hazard Class 7 Radioactive).

Responding agencies may include several or more of the following: local municipal and county fire, police, sheriff and Emergency Medical Services (EMS) personnel; state, local, and federal emergency response teams; emergency response contractors; and other emergency response resources that could potentially be provided by the transporter and the originating facility (shipper).

The goals of this drill are to:

- demonstrate the emergency response notification and communication system
- observe actual response times of emergency responders to a simulated accident scene
- verify equipment operability (including radiological monitoring equipment) and the accuracy of field emergency response procedures
- ensure all appropriate notifications are made in accordance with local, state, and federal regulations
- identify and assess hazards
- determine and implement protective measures required for both responder personnel safety and public safety
- determine additional response resources required to contain and restore the site and make appropriate notifications to obtain those resources

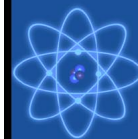
This manual provides the guidance for conducting the drill in a safe, efficient, coordinated manner and provides a historical record of the drill.

### **NOTICE:**

**The drill presented consists of postulated data for a simulated highway transportation accident involving LSA material.**

**This drill was developed to observe the ability of emergency response personnel to deal with a hypothetical incident. Its purpose is to provide emergency responders with sufficient data to allow them to respond according to existing emergency plans and procedures.**

**The incident portrayed in this drill is hypothetical and should not be considered as actual or probable.**



## 2.0 Scope

This drill scenario should be used to demonstrate emergency response resource deployment for the local community to respond to a highway accident involving LSA materials. It may also be used to demonstrate the initial phase of the emergency response notification and communication system to:

- observe response times of emergency responders to a simulated accident scene
- demonstrate response activities, including
- responder deployment
- responding agency interaction
- Incident Command System (ICS) establishment and operations
- identification and assessment of hazards
- incident control

## 3.0 Objectives

The objectives listed below are based on a simulated transportation (highway) accident and should be performed in accordance with the appropriate state, county and local community procedures and according to the standards and limits outlined in each respective extent of play. The numbering system employed for the objectives is based on the objective numbers from the Federal Emergency Management Agency (FEMA) Hazardous Materials Exercise Evaluation Methodology (HM-EEM); the objectives are not in sequential order. A complete listing of the 16 FEMA HM-EEM objectives (and evaluation criteria checklists) is contained in the Objectives Module Manual.

### **Objective 1. Initial Notification of Response Agencies and Response Personnel.**

*Demonstrate the ability to notify response agencies and to mobilize emergency personnel.*

#### **Extent of Play:**

This objective should be demonstrated by each participating response agency as it would in an actual emergency. All appropriate primary or back-up communications systems (radio, cell phone, land line, etc.) should be used during the drill as in an actual emergency.

The drill will be initiated by contacting the local emergency notification network and reporting to the simulated accident location. All appropriate federal/state/county/local response agencies and units agreeing to participate should be appropriately notified and should respond. All response units should be timed from receipt of emergency notification to arrival on scene.

Personnel/units should be deployed, real-time, to the accident scene based on accident conditions relayed via the notifications system. Responding units shall not transit in an “emergency mode” (i.e., no lights and sirens) and should not take/perform any action that impacts the general public, such as establishing road blocks or detours at or near the simulated incident scene.



Low Specific Activity (LSA) Materials Hazard Class 7  
**Radioactive Material Shipment With Environmental Release**  
Scenario Package

planning tools

**Objective 2. Direction and Control**

*Demonstrate the ability to direct, coordinate, and control emergency response activities through operation of an Incident Command System (ICS) and other direction and control structures.*

**Extent of Play:**

This objective should be demonstrated by the arrival and assumption of the Incident Commander (IC) position by the first responding unit/personnel as it would be in an actual emergency. The position and responsibility of IC should be transferred to the senior response officer, upon arrival, and a status turnover should be conducted. A visible command post, communication system, and organizational structure should be established. (Assumption: Response personnel have been trained to conduct response using ICS).

**Objective 3. Incident Assessment**

*Demonstrate the ability to identify the hazardous materials involved in an incident/accident and to assess the hazards associated with the material involved during both the emergency and post-emergency phases.*

**Extent of Play:**

This objective should be demonstrated by the active assessment of the incident hazards, including a preliminary observational survey of possible injuries, physical hazards at the accident site, materials released, extent of release, release receptors, and the hazards associated with the materials. The initial assessment information should be obtained from placards, shipping documents, labeling, and the North American Emergency Response Guidebook. Based on the preliminary observational assessment, a determination of further resources to physically assess the incident site should then be made. If resources are available, further physical assessment should occur. If local resources are not available for further assessment, requests for assistance should be made as appropriate (State Response Team or other higher level technical responders).

**Objective 4. Resource Management**

*Demonstrate the ability to mobilize and manage resources required for emergency.*

**Extent of Play:**

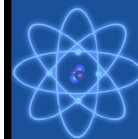
This objective should be demonstrated by determining the resources required for response as result of the incident assessment. Once the resources required are determined, proper notification and mobilization should occur. Additional resources should be integrated into the response effort by the Incident Commander.

**Objective 5. Communications**

*Demonstrate the ability to establish and maintain communications essential to support response to an incident/accident.*

**Extent of Play:**

This objective should be demonstrated by establishing and maintaining communication between all resources activated for the response. All appropriate primary or back-up communications systems (radio, cell phone, land line, etc.) should be used during the drill as in an actual emergency. A communications system between response personnel should be established on site by the Incident Commander, as should off-site communications to local, state, federal, shipper, transportation and contract resources.

**Objective 10. Response Personnel Safety**

DEPARTMENT OF ENERGY







*Demonstrate the ability to protect emergency responder health and safety.*

**Extent of Play:**

This objective should be demonstrated by the establishment, by the site safety officer, of one or more zones to regulate the movement of personnel throughout the accident scene/site, determination and usage of appropriate personal protective equipment (PPE), and usage of appropriate monitoring equipment for site hazards.

**Objective 11. Traffic and Access Control**

*Demonstrate the organizational ability and resources to implement site security and to control evacuation traffic flow and access to evacuated and sheltered areas.*

**Extent of Play:**

This objective should be demonstrated by the effective implementation of site security measures by appropriate resources and effective traffic control to divert unnecessary traffic away from the area of the incident/accident. Although security units should be sent to the proper locations for traffic control, no actual roadblocks/detours, etc., shall be established that would affect the general public.

**Objective 14. Emergency Medical Services**

*Demonstrate the adequacy of personnel, procedures, equipment, and vehicles for transporting contaminated and/or injured individuals, and the adequacy of medical personnel and facilities to support the operation.*

**Extent of Play:**

This objective should be demonstrated by the effective determination of EMS resources required for the accident site, communication of potential contamination hazards that may require pre-notification to EMS and other medical support personnel, and steps taken by EMS personnel to plan and prepare for potential contamination hazards.

**Delete this paragraph if the medical injury is omitted:**

Treatment of the injured driver should be demonstrated by the arrival of the EMS unit to the site, followed by coordination with the IC, injury assessment and treatment. Actual transport of the victim to a hospital will be simulated.

**Objective 15. Containment and Cleanup**

*Demonstrate the ability to implement appropriate measures for containment, recovery, and cleanup of a release of a hazardous material.*

**Extent of Play:**

This objective should be demonstrated by notifying and obtaining resources for assistance. Personnel (response and additional resources) should assess the impact of the release, demonstrate appropriate planning strategies for control and containment, and then control and contain the material released, if adequate resources are available.

**Objective 16. Incident Documentation and Investigation**

## Low Specific Activity (LSA) Materials Hazard Class 7 Radioactive Material Shipment With Environmental Release Scenario Package



*Demonstrate the ability to document a hazardous materials incident/accident and response.*

### Extent of Play:

This objective should be demonstrated by implementing appropriate log keeping, follow-up documentation, and debriefing procedures.

## 4.0 Example Schedule

Table 1.0 provides an example schedule for planning and executing the drill. This schedule may be modified for site-specific drill conditions.

**Table 1.0**

### Example Schedule

ACTIVITY	LOCATION	DATE	DURATION (Approximate)
Controller Briefing	TBD	Day 1	1.5 Hours
Controller Field/Scene Walk-downs)	TBD	Day 2	2.0 Hours
Drill Player Briefing	TBD	Day 3	1.0 Hours
Drill Conduct	TBD	Day 3	2.0 Hours
Controller Debriefing	TBD	Day 3	1.0 Hours
Player Debriefing	TBD	Day 3	1.0 Hours

## 5.0 Participation



The following is a list of suggested personnel/groups that may participate in the drill, depending on the desired complexity of the drill. (Many of these agencies may be simulated.)

### Local Response Organizations

Local Fire Department

Local Municipal Police Department

Local Emergency Operations Center (EOC)

County Sheriff's Office

Emergency Medical Service/Ambulance/Hospital

Local HAZMAT Response Team (if available)

Other Mutual Aid Organizations (e.g., Nearby Air Force Base or Power Plant Response Team)

### State/Federal Agencies

US Environmental Protection Agency

State Environmental Regulatory Agency Emergency Response Team

State Emergency Operations Center (EOC)

National Response Team

DOE Facility Simulated as Initiating Shipment

National Response Center (US Coast Guard)

Regional On-Scene Coordinator

Regional RAP Team

State RAD Response Team

Nuclear Regulatory Commission

### Commercial Organizations

Commercial Licensed Radioactive Materials Transporter

Commercial Contractor Trained for Radioactive Material Cleanup

## 6.0 Conduct







The following section provides guidelines for drill conduct.

## Concept of Operations

*Three groups of personnel should participate in the drill: Players, Controllers and Observers.*

### Players

Players are individuals who have assigned roles during an emergency. Players should respond to the scenario as they would during an actual emergency, initiating actions to control and mitigate the simulated emergency to ensure the health and safety of response personnel and the public.

Players are expected to obtain necessary information through established emergency information channels and to use their own judgment in determining response actions when resolving problems.

### Controllers

Controllers are responsible for the safe and effective conduct of the drill. They perform an active role in the drill by providing data to Players. Controllers are the only non-Players who provide information or direction to Players. Controllers may prompt or initiate certain Player actions to ensure drill continuity. Controllers are identified by wearing a standard identification device.

### Observers

Observers are persons who do not have an active drill role but who watch drill conduct. Observers do not communicate directly with players. They should, however, report any safety concerns to a controller. Observers are identified by wearing standard identification devices different from those worn by controllers.

## Controlling Messages

### Drill Messages

Drill messages are used to control the flow and progress of the drill. These messages are designed to simulate the physical indications that would normally be available to responders in an actual emergency. Drill messages are issued by Controllers to Players at appropriate times. The issuance of drill messages is coordinated via the scenario timeline; Controllers are briefed prior to the drill in an controller briefing. Concurrence from the Lead Controller during the drill is **not normally** required.

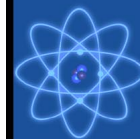
### Contingency Messages

Contingency messages are used to ensure the continuity of the drill in the event that Players do not initiate actions that are critical to the drill timeline. Issuance of contingency messages requires the notification of the Lead Controller PRIOR to issuance, in most instances.

### Drill Controller Debrief/Drill Report

Immediately upon termination of the drill, Drill Controllers should meet to review player actions and identify drill issues. A drill report documenting drill observations should be prepared upon completion of the drill and should be submitted to the appropriate organizations.

### Drill Ground Rules





At no time shall Players, Controllers or Observers physically walk across the highway or railroad tracks without the escort of Safety Controllers or Public Safety Officers.

Players shall not have prior knowledge of the scenario.

The drill scenario should not include any actions or situations that degrade the actual condition of systems and equipment, affect the detection and assessment of actual emergencies, or diminish the capability for response to actual emergencies.

No actions or reactions shall be initiated that involve actual operation of equipment (other than RAD monitoring) or affect operating capability.

Emergency response facilities should not be pre-activated and response personnel should not be pre-staged. All players should follow their normal work routines until drill events cause them to initiate emergency response actions.

Except for the actions identified in the list of actions to be simulated, or as otherwise directed by drill Controllers, Players are to respond to drill events and information as if the emergency were real.

Players shall act as if simulated hazardous conditions were real.

All drill participants shall take no action that reduces the safety of themselves or the public.

All drill participants shall adhere to public laws, including traffic regulations, and shall follow any orders given by law enforcement personnel.

Controllers should only provide Players with the information that they are specifically designated to disseminate in their assigned functional area. Players are expected to obtain other necessary information through existing emergency information channels.

In the event that Players do not initiate actions "critical" to the successful completion of the drill scenario, Controllers should issue Contingency Messages, which direct Players to initiate specific actions and/or provide on-the-spot training to assist completion of critical actions.

All drill messages and communications shall be preceded and followed by the phrase, "THIS IS A DRILL."

### **Drill Controller Guidelines**

The responsibility of Drill Controllers is to ensure that drill events occur in the sequence prescribed by the scenario and to monitor drill play. Drill Controllers must be familiar with the emergency plan and procedures that pertain to their assigned area.

### **Before Drill Day**

**Low Specific Activity (LSA) Materials Hazard Class 7  
Radioactive Material Shipment With Environmental Release  
Scenario Package**

**planning tools**



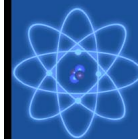
1. Familiarize yourself with the drill objectives and extent of play applicable to your area of control.
2. Ensure that you understand the scenario and timeline.
3. Obtain and review emergency procedures applicable to your area of control.
4. Familiarize yourself with the Controller organization and communication methods.
5. Review drill messages and scenario information that you are responsible to provide to Players. Ensure that you understand how the Players are to receive this information and what their responses should be.
6. Ensure you know how to contact the Lead Controller for questions or problem resolution.
7. Perform a field walk-down of your observation location(s) to ensure you know where and when you must report prior to drill commencement.

**Immediately Prior to the Drill**

1. Report to your assigned area as scheduled.
2. Familiarize yourself with your assigned work station and equipment.
3. Ensure that you are readily identifiable by all Players.
4. Identify and test a phone or radio that you may use for communications with other Controllers.
5. Identify yourself to any Players who may be in your area of control. Ensure they are familiar with your role.

**During the Drill**

1. Ensure that safety remains the number one priority for all actions and activities carried out during the drill.
2. Identify all Players that you will be controlling during the drill, and inform them of your function.
3. If applicable, brief all Players in your area on drill ground rules and/or initial conditions. Explain that you may help/instruct the Player(s) in proper response actions based on their actions during the drill.
4. Remain at your assigned location until the drill has been terminated by the Lead Controller.
5. Ensure that each Player in your area of control/observation has been logged on an attendance sheet and that the attendance sheet identifies the appropriate facility.
6. If a real emergency occurs that affects the Players in your area of control/observation, terminate your portion of the drill and notify the Lead Controller.
7. Refer any/all actual general public and/or media inquiries to the "Official Drill Information Contact Point," TBD, as applicable, based on your location.
8. Position yourself to maximize your effectiveness in issuing messages and/or observing the players.
9. Record arrival times and actions of key players.



DEPARTMENT OF ENERGY





10. Distribute drill messages, as required, and provide additional input, as necessary, to keep the scenario progressing as designed. Make sure that the Players understand the messages you give them.
11. If you are uncertain what actions are being taken by the Players or why, make sure you ask, so that you understand the extent of play. Phrase questions so as not to prompt the Players of expected actions. Allow the Players reasonable flexibility to perform their functions and demonstrate their skill, knowledge, and initiative.
12. Do not allow external influences to distract the Players.
13. Do not allow simulation when notification/communication equipment is available (unless the action would decrease the level of personnel safety).
14. Note all your observations, as appropriate, on the provided Drill Chronology Logs and Observation Checklists.
15. Do not allow Player actions to continue if they would obviously impair scenario continuity. Notify the Lead Controller if the timeline is off schedule, if the Players depart significantly from the scenario, or if you are in doubt as to what to do.

#### Upon Drill Termination

1. Complete Drill Chronology Logs.
2. Document drill findings on the appropriate Drill Controller Checklists and Chronology Logs, as appropriate.
3. Participate in the post-drill Drill Controller debriefing.

## 7.0 Narrative Summary/Timeline

The following section provides a narrative summary of the drill scenario and an approximate timeline (Table 2.0, located at the end of this section) for drill activities. The timeline also provides anticipated points during the drill where dissemination of the drill messages contained in Section 8.0 is appropriate. The scenario and timeline are suggested guidelines for the drill and may be modified to meet site specific conditions.

#### Initial Conditions (which are assumed to have occurred prior to drill commencement):

A shipment of LSA materials (Class 7 Radioactive) on a flatbed tractor trailer truck (transporter), initiated from a DOE facility (Shipper), is traveling through the local area. The destination facility is a permitted LSA treatment/disposal site. The vehicle is hauling three large (each approx. 3.5 cubic yards) metal boxes containing LSA materials.

#### Meteorological conditions summary:



## Low Specific Activity (LSA) Materials Hazard Class 7 Radioactive Material Shipment With Environmental Release Scenario Package

### planning tools



- Wind direction is “as read”
- Temperature is “as read”
- Wind speed is “as read”
- Assume rain is in the immediate forecast

*(Note: The assumption of rain may be omitted at the discretion of the Lead Controller, depending on weather conditions on the day of the drill. See Section 10.0, Meteorology, for details.)*

### Drill play begins at this point:

The truck has been involved in a one-vehicle accident, resulting in the truck leaving the pavement and rolling onto its side on the road shoulder. Several straps have broken, resulting in the release of all three boxes. One box has broken open, releasing approximately 20 yellow bags with magenta markings (RAD bags) in an area of approximately 100 square feet. One of the bags has broken open scattering debris (wipes, paper, scrap lumber) throughout the area. The truck driver gets out of the vehicle and sits on the ground a short distance from the accident site.

### Delete this boxed paragraph if you want to omit the medical injury:

The truck driver has sustained a broken arm and a minor contusion on the forehead.

A motorist (role player) in a vehicle in the vicinity accident “observes” the simulated accident and reports it, via cellular phone or CB radio, to the local emergency response network (911 for example) dispatch center. The caller also reports that a truck has overturned, that a large container is on the ground with some yellow bags near it, and that someone is sitting by the road near the truck.

Emergency response units should be dispatched to the incident scene, based on the information available and transmitted via the notification/communications system. Initial emergency response units notified for deployment should include, at a minimum (either real or simulated), local police/sheriff’s department, fire department, HAZMAT Team (if applicable) and EMS.

All arriving units should be timed and accounted for. Any unit arriving with radiological monitoring equipment shall demonstrate radiological monitoring/survey operations.

The first unit to arrive should be from the police/sheriff’s department. This unit should assume initial control of the scene, cordon off the accident area, and set up traffic control, or rerouting. Within 5 minutes of the arrival of the first responder unit, the fire department, HAZMAT Team, and EMS arrive. The Fire Chief should be briefed on the accident scene conditions by the first responder. The Fire Chief should then assume the position of IC from the initial responder. A Command Post should be established along with lines of on-site and off-site communication. The IC should direct and provide personnel roles and responsibility designations. A site safety officer should be assigned to determine requirements for monitoring and PPE.

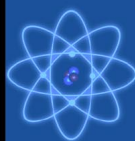
Upon arrival at the scene, EMS should assess the scene and plan/prepare for potential contamination hazards.

### Delete this boxed paragraph if you want to omit the medical injury:



DEPARTMENT OF ENERGY





EMS personnel should assess the extent of injuries sustained by the truck driver, provide initial treatment and then transport him/her to the hospital. (Hospital transport will be simulated.)

Responders should question the driver as to location of shipping papers and cause of the accident.

The driver will have the shipping papers with him. The shipping papers contain the emergency response telephone number provided by the shipper.

An initial hazards assessment should be made of the scene. However, due to the unknown nature of the hazard and potential contamination from the release, personnel should not be allowed within direct proximity of the truck and spilled materials. (Appropriate monitoring equipment and PPE must be utilized for the physical site assessment.) The IC should then brief all responders on the observed hazards at the scene prior to any response actions occurring. A strategy for site safety and response actions should be developed in accordance with the guidelines set forth in the Emergency Response Guidebook.

Proper site control and evacuation procedures should be implemented. Per the Emergency Response Guidebook, persons within 1000 feet of the incident scene should be evacuated (this may require extending the initial cordon established by the arriving unit). Due to the threat of precipitation, the exposed rad material bags and boxes should also be covered with plastic to prevent possible contamination runoff.

A resources assessment should be conducted by the IC/Safety Officer. The resource assessment should reveal monitoring equipment and appropriate PPE needed for additional site assessment. If monitoring equipment is available, the responders will don appropriate PPE and proceed with area surveys for possible contamination. If monitoring equipment is not available the IC should contact other responding agencies for assistance, such as the state spill response team or another higher level technical response unit in the area. No further action should be taken at the site until monitoring occurs.

The IC should request that emergency notification be made by the Dispatcher to the emergency response phone number on the shipping paper (Shipper/DOE). The shipper (simulated by a role player) should provide technical data and response information specific to the material involved. This information is provided to the dispatcher and passed on to the IC. The shipper will also tell the dispatcher/IC that a RAD response team should be deployed to the site within 1 hour. The shipper will then notify the RAD response team for deployment. The driver will have the transporter company notified of the accident (may be simulated). (Note: The transporter is responsible for notifying the Department of Transportation at the earliest practicable moment for incident reporting. This notification may be simulated.)

Other Federal and State response and reporting organizations are notified by the Shipper (DOE originating facility). (This notification may be simulated.)

The RAD Response Team should arrive and report to the IC. The IC should provide a status briefing and make appropriate requests for radiological monitoring. The on-site portion of the drill should be terminated subsequent to arrival of the RAD response team, and the initiation of recovery efforts.

A drill debriefing should be conducted subsequent to termination of the drill to provide evaluation results and lessons learned.

**Table 2.0. Timeline**

Low Specific Activity (LSA) Materials Hazard Class 7  
Radioactive Material Shipment With Environmental Release  
Scenario Package



Clock Time	Suggested Drill Time	Event/Expected Action	Message No.
	-01:00	All controllers are in place. Communications and time check completed between Lead and Controller Staff.	
	-00:15	Incident scene is set up (Drill Controllers, players, prop signs, etc.)	
	00:00	Truck turns over on side of public highway.	1
	00:00	Motorist calls (actual) emergency response network (911) and reports accident/scene conditions.	2
	00:05	Dispatch of emergency units is prompted.	3
	00:15	Emergency response units begin arriving and begin evaluating the Incident Scene.	4
	00:15	EMS personnel begin treating injured truck driver.	MM1
	00:20	EMS personnel are prompted to use contamination precautions.	MM2
	00:20	Site security and control established	
	00:20	ICP established	
	00:25	EMS transports injured driver to hospital (simulated)	MM3
	00:30	Site Assessment for injuries and hazards begins along with the Resource Evaluation. Incident response strategy to be developed	5
	00:45	Radiation Survey Performed (if equipment available)	
	00:50	Local/State Dispatcher(s) directed by IC to contact shipper.	6
	01:15	Deployment message to RAD Response Team	7
	01:00	RAD Response Team (contractor) arrives. Recovery efforts begin.	
	TBD	Hold Message 1 and 2 to be used only for breaks in Play and to resume Play.	
	01:30	Drill Termination announcements to all agencies.	9
	01:30	Drill Controllers and players return incident scene to pre-drill conditions.	
	02:00	Drill Controller/Player debrief and incident documentation at the local command center.	
<b>8.0 Messages</b>			



DEPARTMENT OF ENERGY





This section provides messages to be used during the drill to ensure continuity of play. The messages provide critical scenario data.

## MESSAGE 1

### INCIDENT SCENE MESSAGE

TO: Truck driver (Role-Player)  
FROM: Incident Scene Controller  
TIME: 00:00  
NOTE: This message is used by the controllers to commence the drill. Do not transmit this message without Lead Controller authorization.

The truck driver should be able to describe to players how the accident occurred based on the incident scene location.

### THIS IS A DRILL

***DO NOT initiate actions affecting safe operations***

### MESSAGE:

You are the driver of a truck carrying three boxes of Low Specific Activity Radioactive Material. You lost control of the truck and wrecked.

The truck and trailer turned over, spilling the three boxes on the road side. One of the boxes has popped open releasing its contents. You did not come into contact with the spilled materials.

You were able to get the shipping papers and get out of the truck. You are now sitting by the road.

### Delete this paragraph if the medical injury will be omitted:

When the truck tipped over, you bumped your head and hurt your left arm. You believe your arm may be broken and you are now holding it.

*Note to Incident Scene Controller: Show the driver (role-player) the incident scene drawing in Section 12 to help him/her understand what happened, then explain to him/her how the props correspond to the drawing.*

### THIS IS A DRILL

***DO NOT initiate actions affecting safe operations***

## MESSAGE 2



Low Specific Activity (LSA) Materials Hazard Class 7  
**Radioactive Material Shipment With Environmental Release**  
Scenario Package

planning tools



ROLE PLAYER (MOTORIST) INITIAL NOTIFICATION CALL

TO: Emergency Response Network Dispatcher  
FROM: Motorist (Player)  
TIME: (00:00)  
NOTE: Call in this message via cell phone or CB upon Lead Controller authorization to commence the drill. This message provides a “bystander” eye witness notification of the truck accident.

**THIS IS A DRILL**

***DO NOT initiate actions affecting safe operations***

This is \_\_\_\_\_. I am on highway \_\_\_\_, near mile marker \_\_\_\_, and there has been a truck wreck.

The truck has overturned on its side. I see several large containers the size of garbage bins on the ground near the truck, and some yellow garbage bags scattered nearby.

There doesn't appear to be any smoke or fire coming from the truck

Someone is sitting nearby but away from the truck.

You had better get help out here fast.

**THIS IS A DRILL**

***DO NOT initiate actions affecting safe operations***

**MESSAGE 3 (CONTINGENCY MESSAGE)**



DEPARTMENT OF ENERGY





#### INITIAL DISPATCH OF UNITS

TO: Emergency Response Network Dispatcher  
FROM: Dispatch Controller(s)  
TIME: (00:05)  
NOTE: Issue this message with concurrence of the Lead Controller if no actions have been or are being taken to dispatch emergency units (i.e., police, fire department, HAZMAT or EMS) to the incident scene.

#### THIS IS A DRILL

***DO NOT initiate actions affecting safe operations***

#### MESSAGE:

For the purpose of this drill you are directed to dispatch the following emergency response units to the incident scene (list only the applicable units that have not already been dispatched, as shown below):

- Fire Department
- Police Department
- HAZMAT
- EMS

#### THIS IS A DRILL

***DO NOT initiate actions affecting safe operations***

#### MESSAGE 4

**Low Specific Activity (LSA) Materials Hazard Class 7  
Radioactive Material Shipment With Environmental Release  
Scenario Package**



RESPONDER ARRIVAL TO SCENE, INITIAL CONDITION ASSESSMENT

TO: Responders At The Scene  
FROM: Incident Scene Controllers  
TIME: (00:15)  
NOTE: This message serves to provide players with notice to proceed with the drill and description of simulated incident conditions. The police/sheriff should be first to arrive. Within 5 minutes the remaining first responding units should arrive and be briefed.

\*\* Information within this message will only be relayed to responders positioned within line of site of the specified conditions. Use the drawing in Section 12 if it does not give away unearned information to players and if it helps describe the props available or the absence of props, as applicable. \*\*

**THIS IS A DRILL**

***DO NOT initiate actions affecting safe operations***

**MESSAGE:**

For the purpose of the drill the following information is to be provided to responders within line of site:

- The truck is lying on its left side.
- The closures on one of the three boxes on the ground have been compromised, and the contents have spilled. A number of yellow bags are on the ground near the box.
- No smoke or fire is coming from the truck.
- You see someone at the scene sitting on the ground away from the truck.

Delete this paragraph if the medical injury will be omitted:

- The person sitting near the truck is holding his/her arm.

**THIS IS A DRILL**

***DO NOT initiate actions affecting safe operations***

**MESSAGE 5 (CONTINGENCY MESSAGE)**



DEPARTMENT OF ENERGY





## HAZARD ASSESSMENT

TO: Incident Commander

FROM: Lead Controller

TIME: (00:30)

NOTE: This message is to be given if play stalls during the hazard assessment phase. This message may be used to prompt the players to proceed with the drill. Issue only those portions of the message that are appropriate (i.e., have not been considered or begun).

If the injury in the scenario is not omitted, issue this message before the driver (who has the shipping papers) is taken (simulated) to the hospital.

---

### THIS IS A DRILL

*DO NOT initiate actions affecting safe operations*

---

#### MESSAGE:

Issue only the applicable portions of the message below:

- For the purpose of this drill, you are directed to request that the driver of the truck provide you with the shipping document information.
- You are directed to observe placards and labeling and use the information for hazard assessment purposes.
- You are also directed to determine if resources available are adequate for thorough site assessment and site control.

---

### THIS IS A DRILL

*DO NOT initiate actions affecting safe operations*

---

#### MESSAGE 6 (CONTINGENCY MESSAGE)



Low Specific Activity (LSA) Materials Hazard Class 7  
**Radioactive Material Shipment With Environmental Release**  
Scenario Package

planning tools



SHIPPER INFORMATION

TO: Emergency Network Dispatcher or Incident Commander (as applicable)  
FROM: Dispatcher Controller or Lead Controller (as applicable)  
TIME: (00:50)  
NOTE: This message serves to ensure that technical information from the shipper is received by the Incident Commander. Issue the applicable portion(s) of this message as described in italics below.

---

**THIS IS A DRILL**

***DO NOT initiate actions affecting safe operations***

---

**MESSAGE:**

*If the IC does not call the shipper directly from the Command Post or ask the dispatcher to contact the shipper within a reasonable amount of time OR if the dispatcher has been asked to contact the shipper but has not done so within a reasonable amount of time:*

For the purpose of this drill you are directed to contact the shipper using the Emergency Response Number (as listed on the Shipping Documents or as provided by the IC).

*If action is taken by the IC or dispatcher to contact the shipper, but the shipper is not playing or being simulated by a role-player:*

“Relay the following message to the IC. The material is LSA. Cordon off the area, evacuate 100 meters downwind, have response personnel remain upwind, and do not try to clean up the site. Remain outside of the area of release. A RAD response team is being deployed and should arrive within one hour.”

*If the dispatcher contacts the shipper (actual or role-player) but does not relay the technical information received back to the IC in a reasonable amount of time:*

“For the purpose of this drill you are directed to contact the IC and relay the technical information provided to you by the shipper.”

---

**THIS IS A DRILL**

***DO NOT initiate actions affecting safe operations***

---

**MESSAGE 7 (CONTINGENCY MESSAGE)**



DEPARTMENT OF ENERGY





## RADIATION RESPONSE TEAM BRIEFING WITH INCIDENT COMMANDER

TO: Incident Commander

FROM: Lead Controller

TIME: (01:30)

NOTE: The purpose of this message is to ensure the Radiation Response Team is integrated into the Incident Command System after their arrival. If an actual or simulated (by role-players) Radiation Response Team is participating, this message will be used to prompt the IC to give a situation briefing to the Radiation Response Team if the IC does not initiate this action within approximately 10 minutes of Radiation Response Team arrival. If the Radiation Response Team is being simulated and no role-players are available, the Lead Controller will simulate the team and request a turnover briefing using the second portion of this message.

### THIS IS A DRILL

***DO NOT initiate actions affecting safe operations***

#### MESSAGE:

*Issue this portion of the message ONLY if the Radiation Response Team (actual or role-players) has been at the Command Post for approximately 10 minutes and the Incident Commander has not shown any initiative to provide the team with a briefing and integrate them into the response activities:*

For the purpose of the exercise being conducted today, you are directed to give the members of the Radiation Response Team a briefing and then integrate them into the response activities.

*Issue this portion of the message ONLY if the Radiation Response Team is being simulated by the Lead Controller:*

For the purpose of the exercise being conducted today, I am role-playing the Radiation Response Team. Please provide me with a briefing at this time.

### THIS IS A DRILL

***DO NOT initiate actions affecting safe operations***

#### MESSAGE 8a

Low Specific Activity (LSA) Materials Hazard Class 7  
**Radioactive Material Shipment With Environmental Release**  
Scenario Package

planning tools



HOLD MESSAGE 1

TO: All players  
FROM: Lead Controller  
TIME: Upon suspension of drill play  
NOTE: DO NOT issue this message without authorization from the Lead Controller. Continuation of the drill play will occur upon coordination and concurrence between the Lead Controller and the field controllers.

Exercise play will resume at the direction of the Lead Controller approximately five minutes after message 8b is issued.

---

**THIS IS A DRILL**

***DO NOT initiate actions affecting safe operations***

---

**MESSAGE:**

ATTENTION ALL PERSONNEL. ATTENTION ALL PERSONNEL.  
THE DRILL HAS BEEN SUSPENDED. ALL PERSONNEL ARE TO REMAIN IN THEIR CURRENT LOCATIONS. EMERGENCY RESPONDERS ARE NOT TO DISCUSS DRILL ACTIVITIES DURING THIS SUSPENSION. STAND BY FOR FURTHER INSTRUCTIONS REGARDING DRILL ACTIVITIES.

Make this announcement every 5 minutes.

---

**THIS IS A DRILL**

***DO NOT initiate actions affecting safe operations***

---


**MESSAGE 8B**



DEPARTMENT OF ENERGY



## HOLD MESSAGE 2



TO: All players  
FROM: Lead Controller  
TIME: Upon suspension of drill play  
NOTE: DO NOT issue this message without authorization from the Lead Controller. Continuation of the drill play will occur upon coordination and concurrence between the Lead Controller and the field controllers.

Drill play will resume at the direction of the Lead Controller approximately 5 minutes after this message is issued. Controllers should use the 5 minutes prior to drill continuation to remind players of what was occurring when play was suspended.

---

**THIS IS A DRILL**

***DO NOT initiate actions affecting safe operations***

---

**MESSAGE:**

ATTENTION ALL PERSONNEL. ATTENTION ALL PERSONNEL.  
DRILL ACTIVITIES WILL CONTINUE IN 5 MINUTES. THE DRILL CONTROLLERS WILL PROVIDE INFORMATION TO PLAYERS PRIOR TO CONTINUING THE DRILL.

---

**THIS IS A DRILL**

***DO NOT initiate actions affecting safe operations***

---

**MESSAGE 9**



Low Specific Activity (LSA) Materials Hazard Class 7  
**Radioactive Material Shipment With Environmental Release**  
Scenario Package

planning tools



TERMINATION MESSAGE

TO: All Key Players/Notification Locations  
FROM: Lead Controller  
TIME: (01:45)  
NOTE: Ensure all participating agencies are notified of drill termination via the notification system.

**THIS IS A DRILL**

***DO NOT initiate actions affecting safe operations***

**MESSAGE:**

The LSA Materials Drill is now terminated. Please make all necessary termination notifications. A drill debriefing will be conducted at \_\_\_\_\_ (location) at \_\_\_\_\_ (time).

(Repeat Message)

**THIS IS A DRILL**

***DO NOT initiate actions affecting safe operations***

**9.0 Radiological Data**



DEPARTMENT OF ENERGY





One of the bags of simulated LSA material will be punctured on its bottom and is simulated to have spread small amounts of contamination in the immediate vicinity, as depicted by the drawing (Figure 1) on the next page.

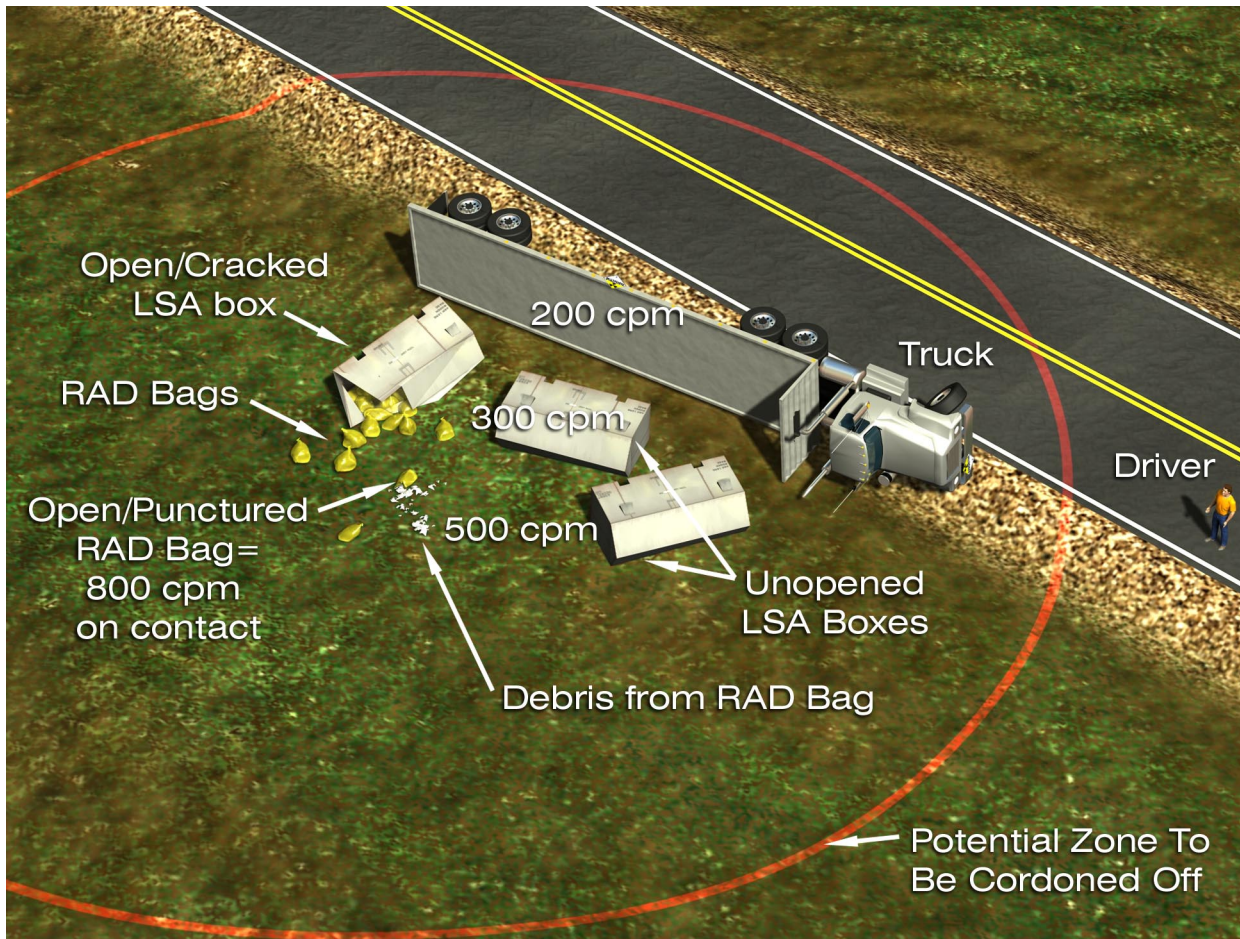
If/when radiological monitoring surveys are performed (by the first responding unit(s) or the RAD Response Team) in close proximity (along a thirty-foot path between the bag and the truck) to the simulated damage LSA bag, personnel will detect between 200 and 500 cpm ?? and no detectable levels of ? contamination. On-contact readings with the damaged LSA bag will be 800 cpm at the torn location. Radiation readings in all other areas, including other undamaged LSA bags, will be at “background” or Non-Detectable (ND) levels.

Controllers should only give the above radiation data to players if and when they use their survey equipment properly. For instance, if players do not turn their equipment on, controllers should indicate to them that their instruments are reading the lowest possible numbers on their scale.

### FIGURE 1: CONTAMINATION LEVELS



## 10.0 Meteorological Data



DEPARTMENT OF ENERGY







All weather conditions for this drill are “As Read,” with the exception of rain in the forecast. If rain is actually occurring when drill play begins, play meteorology “live”. If actual meteorology calls for snow (or another form of precipitation different from rain), the Lead Controller may, at his/her discretion, modify the initial conditions calling for rain.

Drill play will be suspended for certain adverse weather conditions as described in the Safety Plan.

## 11.0 Public Information Data

There are no Public Information (Drill play) activities for this Drill.

Refer any/all “actual” general public and/or media inquiries to the “Official Drill Information Contact Point,” TBD, as applicable, based on your location.

## 12.0 Drawings/Props

### Drawings

A suggested site schematic drawing is provided on the next page (Figure 2). This may be modified to suit local site conditions.

### Props (suggested)

- Truck - May use a truck that is upright
- Placard for Class 7 Radioactive Material (see Figure 3)
- Big Metal Boxes (B-25 Box) - May use a metal garbage dumpster or other large box (see Figure 4)
- RAD bags and trash - May use plastic bags appropriately marked (see Figure 5)
- Placards, Labels, Shipping Documents (Figure 6)

Delete this boxed sentence if the medical injury is omitted:

- Moulage for head contusion and broke arm

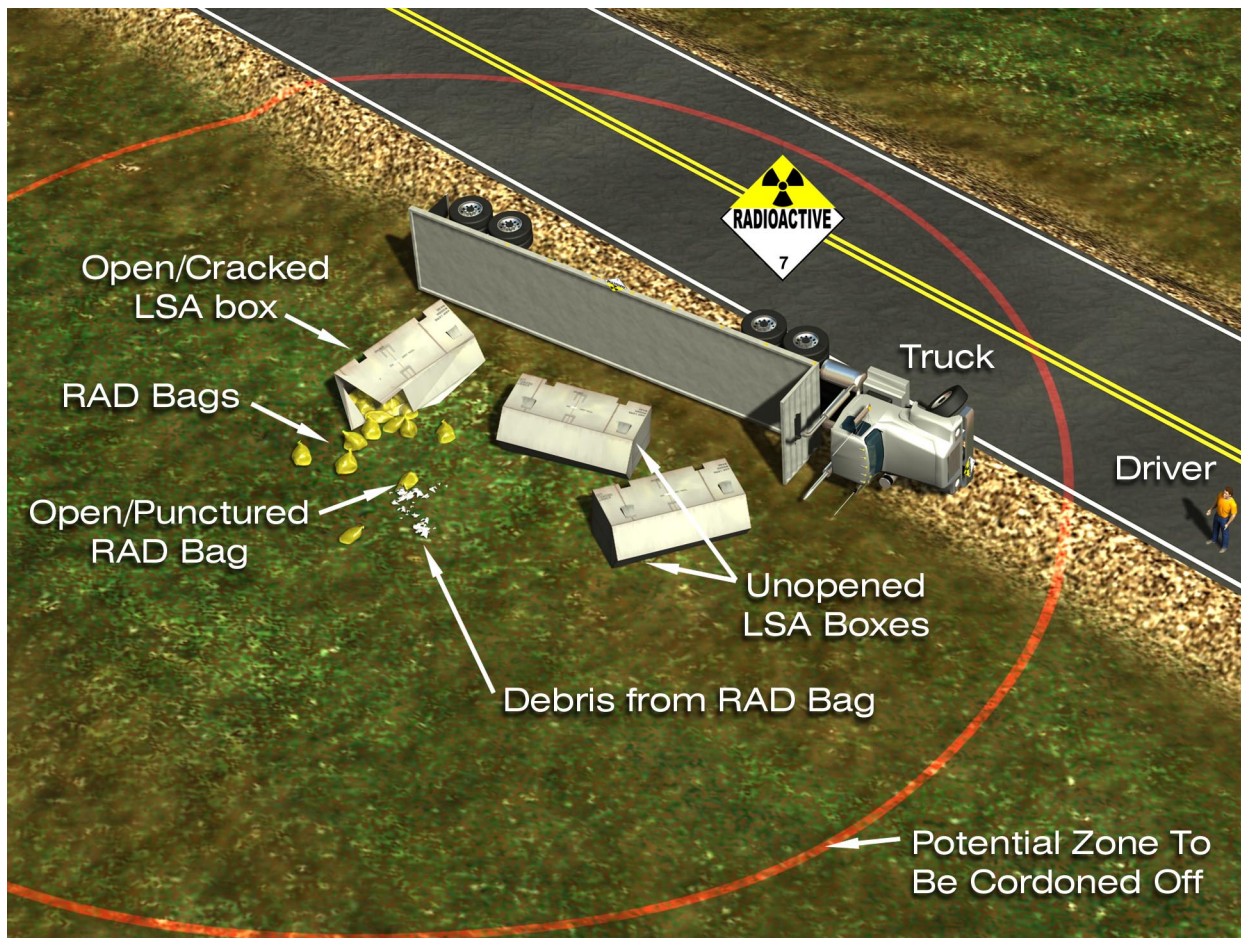
Note: You may decide to use signs, flags and/or traffic cones as “props” in lieu of an actual truck, metal boxes and plastic RAD bags, based on your budget and logistics considerations.

### FIGURE 2: SUGGESTED SITE DRAWING





**FIGURE 3: CLASS 7 RADIOACTIVE PLACARD**



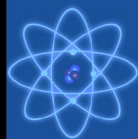
DEPARTMENT OF ENERGY





**FIGURE 4: SIMULATED METAL BOX (B-25)**

**Shaded Yellow**

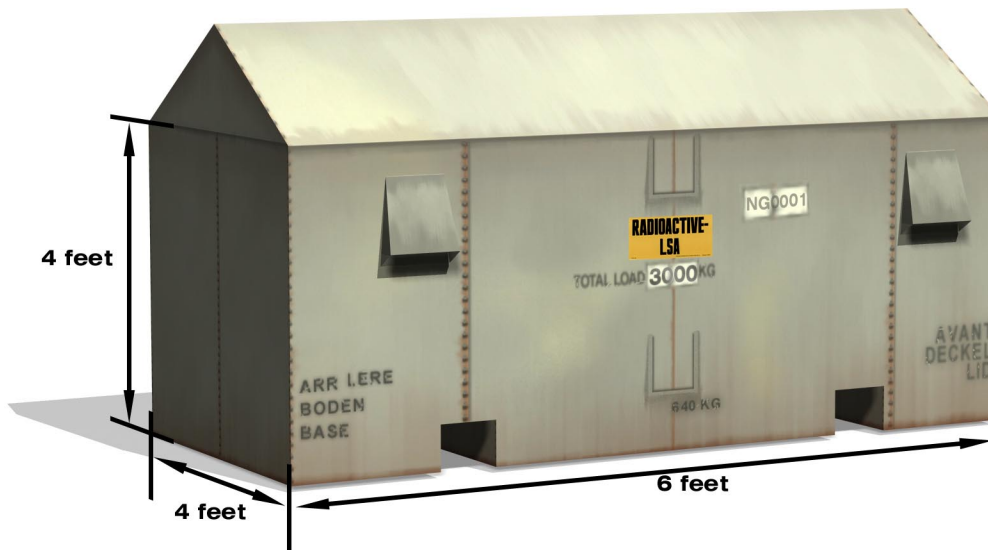


**DEPARTMENT OF ENERGY**





FIGURE 5: SIMULATED RAD BAG



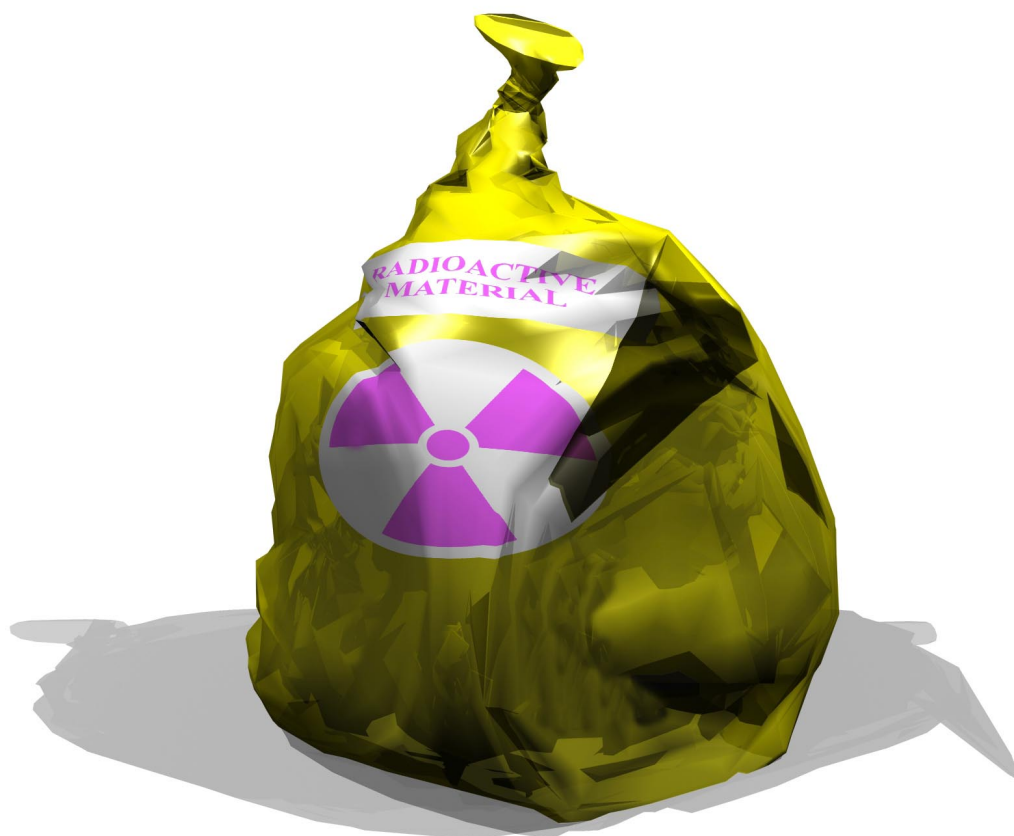
DEPARTMENT OF ENERGY







FIGURE 6: SHIPPING DOCUMENT EXAMPLE



DEPARTMENT OF ENERGY





Low Specific Activity (LSA) Materials Hazard Class 7  
Radioactive Material Shipment With Environmental Release  
Scenario Package



FIGURE 7: EMERGENCY RESPONSE GUIDE (162)

**STRAIGHT BILL OF LADING - SHORT FORM - Original - Not Negotiable**

Shipper's No. \_\_\_\_\_

(Carrier \_\_\_\_\_ SCAC. \_\_\_\_\_ Carrier's No. \_\_\_\_\_  
Received, subject to the classifications and tariffs in effect on the date of this Bill of Lading  
at \_\_\_\_\_ date \_\_\_\_\_ from \_\_\_\_\_

The property described below is in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated below, which said company (the word "company" being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination, if on its own road or its own water line otherwise to deliver to another carrier on the route to said destination it is mutually agreed as to each carrier of all or any of said property over all or any portion of said route to destination and as to each party at any time interested in all or any of said property that every service to be performed hereunder shall be subject to all the conditions not prohibited by law, whether printed or written herein contained (as specified in Appendix B to Part 1035) which are hereby agreed to by the shipper and accepted for himself and his assigns.

(Mail or street address of consignee for purposes of notification only.)  
TO: ☒ Consignee  
Street  
Destination Zip: \_\_\_\_\_

FROM: ☒ Shipper  
Street  
Origin Zip: \_\_\_\_\_

Route: \_\_\_\_\_

Delivering Carrier \_\_\_\_\_

No. of packages	HM	Description of articles, special marks, and exceptions	Hazard Class	I.D. Number	Packing Group	*Weight (subject to correction)	Class or Rate	Labels required (or exemption)	Check column
3	RQ	Radioactive Material, LSA, n.o.s.	7	UN2918	NA	9000KG		RADIOACTIVE (WHITE I)	
		Radionuclide: Tritium ( $\pi 3$ )							
		Solid form as Tritium Contaminated debris							
		Total Activity: 18 TBq							
		Transport Index: 0.0							
		Emergency Response Guidebook Number: 162							

Remit C.O.D. to:  
Address: \_\_\_\_\_  
City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

**COD AMT**  
\$ \_\_\_\_\_  
Charges Advanced \$ \_\_\_\_\_

Subject to section 7 of conditions if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement.  
The carrier shall not make delivery of this shipment without payment of freight

**C. O. D. FEE:**  
Prepaid ☐  
Collect ☐ \$ \_\_\_\_\_  
**FREIGHT CHARGES**  
☐ Prepaid ☐ Collect

If the shipment moves between two ports by a carrier by water, the law requires that the bill of lading shall state whether it is "carrier's or shipper's weight".  
Note: where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property.  
The agreed or declared value of the property is hereby \_\_\_\_\_ per \_\_\_\_\_

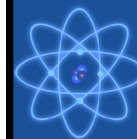
This is to certify that the above-mentioned materials are properly classified, described, packaged, marked and labeled and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.

**PLACARDS REQUIRED** **Radioactive Class 7, HRCQ** **PLACARDS SUPPLIED** ☒ YES ☐ NO - FURNISHED BY DRIVER'S SIGNATURE: \_\_\_\_\_

**SHIPPER:** \_\_\_\_\_ **CARRIER:** \_\_\_\_\_  
DATE: \_\_\_\_\_ PER: \_\_\_\_\_ DATE: \_\_\_\_\_  
EMERGENCY RESPONSE \_\_\_\_\_  
Monitored at all times the Hazardous Material is in transportation including storage incidental to

Permanent post office address of shipper: \_\_\_\_\_

9-BLS-A3 (Rev. 7/95)



DEPARTMENT OF ENERGY



FIGURE 7: EMERGENCY RESPONSE GUIDE (162)

**GUIDE  
162**

**RADIOACTIVE MATERIALS  
(LOW TO MODERATE LEVEL RADIATION)**

**NAERG96**

**POTENTIAL HAZARDS**

**HEALTH**

- Radiation presents minimal risk to transport workers, emergency response personnel, and the public during transportation accidents. Packaging durability is related to potential hazards of material.
- Undamaged packages are safe; contents of damaged packages may cause external and/or internal radiation exposure.
- Low radiation hazard when material is inside container. If material is released from package or bulk container, hazard will vary from low to moderate. Level of hazard will depend on the type and amount of radioactivity, the kind of material it is in, and/or the surfaces it is on.
- Some material may be released from packages during accidents of moderate severity. This poses little risk to people.
- Released radioactive materials or contaminated objects usually will be visible if packaging fails.
- Some exclusive use shipments of bulk and packaged materials will not have "RADIOACTIVE" labels. • Placards, markings, and shipping papers provide identification.
- Some packages may have a "RADIOACTIVE" label and a second hazard label. The second hazard is usually greater than the radiation hazard; so follow this Guide as well as the response Guide for the second hazard class label.
- Some radioactive materials cannot be detected by commonly available instruments.
- Runoff from control of cargo fire may cause low-level pollution.

**FIRE OR EXPLOSION**

- Some of these materials may burn, but most do not ignite readily.
- Uranium and Thorium metal cuttings or granules may ignite spontaneously if exposed to air (see Guide 136).
- Nitrates are oxidizers and may ignite other combustibles (see Guide 141).

**PUBLIC SAFETY**

- **CALL Emergency Response Telephone Number on Shipping Paper first. If Shipping Paper not available or no answer, refer to appropriate telephone number listed on the inside back cover.**
- **Priorities for rescue, life-saving, first aid, and control of fire and other hazards are higher than the priority for measuring radiation levels.**
- Radiation Authority must be notified of accident conditions, and is usually responsible for radiological decisions.
- Isolate spill or leak area immediately for at least 25 to 50 meters (80 to 160 feet) in all directions. • Stay upwind. • Keep unauthorized personnel away.
- Detain or isolate uninjured persons or equipment suspected to be contaminated; delay decontamination and cleanup until instructions are received from Radiation Authority.

**PROTECTIVE CLOTHING**

- Positive pressure self-contained breathing apparatus (SCBA) and structural firefighters' protective clothing will provide adequate protection.

**EVACUATION**

**Large Spill**

- Consider initial downwind evacuation for at least 100 meters (330 feet).

**Fire**

- When a large quantity of this material is involved in a major fire, consider an initial evacuation distance of 300 meters (1000 feet) in all directions.

Page 272



DEPARTMENT OF ENERGY





Low Specific Activity (LSA) Materials Hazard Class 7  
**Radioactive Material Shipment With Environmental Release**  
 Scenario Package

planning tools



13

NAERG96

**RADIOACTIVE MATERIALS**  
 (Low to Moderate Level Radiation)

**GUIDE**  
**162**

**EMERGENCY RESPONSE**

**FIRE**

- Presence of radioactive material will not change effectiveness of fire control techniques.
- Move containers from fire area if you can do it without risk.
- Do not move damaged packages; move undamaged packages out of fire zone.

**Small Fires**

- Dry chemical, CO<sub>2</sub>, water spray or regular foam.

**Large Fires**

- Water spray, fog (flooding amounts).
- Dike fire-control water for later disposal.

**SPILL OR LEAK**

- Do not touch damaged packages or spilled material.

**Liquid Spills**

- Cover with sand, earth or other noncombustible absorbent material.
- Dike to collect large liquid spills.
- Cover powder spill with plastic sheet or tarp to minimize spreading.

**FIRST AID**

- Medical problems take priority over radiological concerns.
- Use first aid treatment according to the nature of the injury.
- Do not delay care and transport of a seriously injured person.
- Apply artificial respiration if victim is not breathing.
- Administer oxygen if breathing is difficult.
- In case of contact with substance, wipe from skin immediately; flush skin or eyes with running water for at least 20 minutes.
- Injured persons who contacted released material may be a minor contamination problem to contacted persons, equipment and facilities.
- Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

Page 273



DEPARTMENT OF ENERGY



Most drill activities will actually be performed as if the incidents were really occurring. The following list identifies the actions to be simulated when and if these actions are indicated in response to the simulated scenario events. Additionally, Controllers may direct participants to simulate certain activities to avoid performing actions that may cause adverse effects.

- Accident scene(s), damaged equipment, injured personnel and other simulations may be accomplished through the use of a sign(s) indicating the truck wreck location, etc. Props, mock-ups, and victim role players should be used in this drill.
- No public notification or any other actions affecting the general public should be implemented.
- Roadblocks or detours should be physically established as a result of the accident scene location.
- Some roles and notification phone numbers may be simulated depending upon agencies that are participating. Simulated roles may include the RAD Response Team, federal agencies notified, the shipper, and agencies other than local emergency responders. These simulations shall be accomplished through the use of role players and assigned phone numbers to role players.
- The truck, containers and released materials will be simulated using appropriate props.
- Transport of the injured truck driver to the hospital will be simulated.

## **14.0 Security**

If necessary (depending on the location of your incident scene), some local law enforcement personnel (non-players) may be pre-staged at the scene for scene safety reasons (i.e., reroute traffic away from the simulated scene). However, the impact of the drill on the general public should be kept at a minimum.

Law Enforcement units and personnel who are actually dispatched as part of drill play should report to locations as directed for scene control. However, these units should NOT actually establish barricades or cordons that would affect the general public. Public Safety/Security controllers will determine the effectiveness of law enforcement activities by noting the arrival times, locations and simulated activities of these units.

## **15.0 Medical Data**





**Low Specific Activity (LSA) Materials Hazard Class 7  
Radioactive Material Shipment With Environmental Release  
Scenario Package****planning tools**

*Note: Remove this entire section from the scenario package if the medical injury will be omitted.*

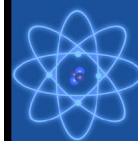
The medical injury in this scenario occurs when the driver of the truck (role-player) wrecks and flips the truck onto its left side (simulated) as drill play begins. The driver escapes from the truck by him/herself and sits down on the shoulder of the road a short distance away. His/her injuries consist of a mild head contusion (bump) and a fractured (closed) left arm. He/she does not come into contact with any of the LSA boxes or RAD bags that are scattered on the ground near the truck, and he/she was able to bring the Shipping Documents out of the vehicle.

The driver role-player should be alert and fully able to describe to any player who asks how the simulated accident occurred, using a plausible explanation based on the incident scene chosen. For instance, one possible explanation is: "I fell asleep and ran off the shoulder of the road where the road bends. I woke up and tried to pull it back onto the road but the wheels went over the edge of the embankment and I flipped. I was able to climb out of the passenger window."

A motorist who comes upon the scene calls the emergency dispatcher and reports the accident, including seeing someone sitting on the side of the road holding his/her arm.

When EMS arrives, the radiation hazard will have been discovered and EMS personnel should take the necessary precautions to prevent the possible spread of contamination. A contingency message is included in the messages that follow that can be used by the EMS/Medical Controller if EMS takes no precautions and it is likely that players would unknowingly spread simulated contamination. Using this message would prevent having to issue "ad hoc" data for contamination, which is not addressed in this scenario package.

Medical play will terminate when the victim is loaded onto the ambulance. Actual transport of the victim (role-player) will be simulated.

**MEDICAL MESSAGES****DEPARTMENT OF ENERGY**

**MM# 1**

TO: First Responders/EMS

FROM: EMS Controller

NOTE: This data applies to a patient with a fractured arm and a mild head injury. Do not provide this data to players unless the means to obtain it are demonstrated.

**THIS IS A DRILL**

***DO NOT initiate actions affecting safe operations***

**Message:**

Patient complains of point tenderness with edema present at pain location on his left arm. Movement of the extremity is present. Distal pulses and sensation are present.

Patient also suffered a mild blow to the head. Small hematoma noted at impact site, with no deformity or loss of consciousness.

Minutes After				
EMS Arrival:	+0	+10	+20	+30
Level of				
Consciousness:	Alert/Oriented	Alert/Oriented	Alert/Oriented	Alert/Oriented
Respirations:	As Read	As Read	As Read	As Read
Pulse:	As Read	As Read	As Read	As Read
Skin:	Normal	Normal	Normal	Normal
Pupils:	PERL	PERL	PERL	PERL
Blood Pressure:	As Read	As Read	As Read	As Read

**Expected Action:**

Follow local protocols and standing orders.

**THIS IS A DRILL**

***DO NOT initiate actions affecting safe operations***

**MM# 2**



Low Specific Activity (LSA) Materials Hazard Class 7  
**Radioactive Material Shipment With Environmental Release**  
Scenario Package

planning tools



TO: First Responders/EMS

FROM: EMS Controller

NOTE: This data should be issued by the Lead EMS Controller only if EMS personnel take no precautions against the spread of contamination and their actions at the scene (i.e., their approach to the scene or a search for other possible victims) would likely cause the spread of contamination and require controllers to issue “ad hoc” contamination data if those personnel were surveyed.

**THIS IS A DRILL**

***DO NOT initiate actions affecting safe operations***

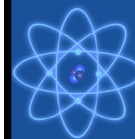
**Message:**

For the purpose of this drill, you are directed to plan for and take all necessary precautions to prevent the spread of radiological contamination as required by procedures.

**THIS IS A DRILL**

***DO NOT initiate actions affecting safe operations***

**MM# 3**



DEPARTMENT OF ENERGY



TO: First Responders/EMS  
FROM: EMS Controller

NOTE: This message should be issued after the victim role-player has been prepared for transport, and before EMS personnel begin actual transport to a hospital.

If no action has been taken by the Incident Commander to obtain the Shipping Documents that the driver brought with him/her out of the truck, the EMS Controller at the scene should contact the Lead Controller to initiate the issuance of Contingency Message #5 in Section 8.0 to ensure that the IC obtains this paperwork prior to the simulated transport of the victim.

---

**THIS IS A DRILL**

***DO NOT initiate actions affecting safe operations***

---

**Message:**

For the purpose of this drill, DO NOT actually transport the victim (role-player) to the hospital. However, you are directed to make drill communications to your dispatcher indicating that simulated transport of the victim has occurred and your ETA.

---

**THIS IS A DRILL**

***DO NOT initiate actions affecting safe operations***

---



DEPARTMENT OF ENERGY

